

IN THE CLAIMS

1-10. (canceled)

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11. (new) A bicycle derailleur comprising:

a hanger bracket;

a first link, having first and second ends, pivotably attached to the hanger bracket, by the first end thereof, at a first pivot axis;

a second link, having first and second ends, pivotably attached to the hanger bracket, by a first end thereof, at a second pivot axis;

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a pulley cage bracket, pivotably attached to the second end of the first link at a third pivot axis and pivotably attached to the second end of the second link at a fourth pivot axis; and

at least one pin, having a given diameter and at least one annular groove, concentrically aligned with at least one of the pivot axes for securing at least one of the first and second links; and

at least one retaining washer, including an annular portion and snap-action engagement portions connected to the annular portion, which receives the pin within an aperture and mates with the annular groove to removably retain the pin.

12. (new) The derailleur of claim 11 wherein the snap-action engagement portions include integral projections, that project radially from the annular portion to define the aperture.

C/A 13. (new) The derailleur of claim 11 wherein the washer includes notches projecting from the annular portion to separate each of the snap action engagement portions.

14. (new) The derailleur of claim 11 wherein the aperture has a diameter smaller than the pin's given diameter.

C/A 15. (new) The derailleur of claim 11 wherein the pin includes at least one end having a lead-in chamfer.

B3 16. (new) The derailleur of claim 11 wherein the annular groove of the pin cooperates with the washer to form a snap fit.

17. (new) The derailleur of claim 16 wherein the annular groove is a square groove.

18. (new) The derailleur of claim 11 wherein the pin is aligned with the first axis, and the annular groove of the pin is positioned between the first link and the hanger bracket, and the washer is connected to the annular groove to removably retain the pin and pivotably attach the first link to the hanger bracket.

19. (new) The derailleur of claim 11 further comprising the hanger bracket having upper opposing portions extending through the first and second axes, the first link further having inner opposing portions creating a recess and extending through the first axis, the first end of the first link positioned between the upper opposing portions, wherein the pin is aligned with the first axis through the inner

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and upper portions, the annular groove of the pin is positioned between an interior surface of the upper opposing portions and an exterior surface of the inner opposing portions, and the washer is connected to the annular groove to removably retain the pin and pivotably attach the first link to the hanger bracket.

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20. (new) The derailleur of claim 11 further comprising the hanger bracket having upper opposing portions extending through the first and second axes, the first link further having inner opposing portions creating a recess, extending through the first axis and positioned between the upper opposing portions, wherein the pin is aligned with the first axis through the inner and upper portions, the annular groove of the pin is aligned within the recess, and the washer is connected to the annular groove to removably retain the pin and pivotably attach the first link to the hanger bracket.

21. (new) The derailleur of claim 11 wherein the hanger bracket has a given width and the pin has a length that is no greater than equal to the given width.

22. (new) The derailleur of claim 11 wherein the annular groove is continuous.

23. (new) A bicycle rear derailleur comprising:

a hanger bracket;

a front link, having first end and second ends, pivotably attached to the hanger bracket at the first end of the front link at a first pivot axis;

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a rear link, having first and second ends, pivotably attached to the hanger bracket at a first end of the rear link at a second pivot axis;

a pulley cage bracket, pivotably attached to the second end of the front link at a third pivot axis, and pivotably attached to the second end of the rear link at a fourth pivot axis; and

at least one pin, having a given diameter, and having at least one annular groove, wherein the pin is concentrically aligned with at least one of the pivot axes for securing at least one of the front and rear links; and

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at least one retaining washer, including a continuous annular portion and snap-action engagement portions connected to the annular portion defining a through hole, which mates with the annular groove to removably retain the pin.

24. (new) The derailleur of claim 23 wherein the snap-action engagement portions are elastically deformable.

25. (new) The derailleur of claim 23 wherein the snap-action engagement portions are separated from one another in a circumferential direction.

26. (new) The derailleur of claim 23 wherein the links define recesses for receiving the retainer washer therein.

27. (new) A method of assembling a derailleur which includes a hanger bracket having upper opposing portions with a plurality of apertures, a first link which has first and second ends having corresponding apertures, a second link which has first

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the second end of the second link and the lower opposing portions, the pin secured by means of one of the retaining washers mating with the annular groove.

28. (new) The method of claim 27 wherein the step of pivotably attaching the first end of the first link includes inserting one of the retaining washers between an exterior surface of the first end of the first link and an interior surface of the upper opposing portions and aligning the washer with the plurality of apertures therein, and driving the pin through the plurality of apertures to engage the retaining washer on the annular groove.

29. (new) The method of claim 27 wherein the first link has a U-shaped structure defining a recess, and the step of pivotably attaching the first end of the first link includes inserting one of the retaining washers within the recess and aligning the washer with the plurality of apertures in the upper opposing portions and the first end of the first link, and driving the pin through the plurality of apertures to engage the retaining washer on the annular groove.

30. (new) The method of claim 27 wherein the step of pivotably attaching the second end of the first link includes inserting one of the retaining washers between an exterior surface of the second end of the first link and an interior surface of the lower opposing portions and aligning the washer with the plurality of apertures therein, and driving the pin through the plurality of apertures to engage the retaining washer on the annular groove.

31. (new) The method of claim 27 wherein the first link has a U-shaped structure defining a recess, and the step of pivotably attaching the second end of the first link includes inserting one of the retaining washers within the recess and aligning the washer with the plurality of apertures in the lower opposing portions and the second end of the first link, and driving the pin through the plurality of apertures to engage the retaining washer on the annular groove.

32. (new) The method of claim 28 wherein the step of pivotably attaching the second end of the first link includes inserting one of the retaining washers between an exterior surface of the second end of the first link and an interior surface of the lower opposing portions and aligning the washer with the plurality of apertures therein, and driving the pin through the plurality of apertures to engage the retaining washer on the annular groove.

33. (new) A method of assembling a bicycle derailleur having a hanger bracket with upper opposing portions that include a plurality of apertures, a front link which has first and second ends that include a plurality of corresponding apertures, a rear link which has first and second ends that include a plurality of corresponding apertures, a pulley cage bracket with lower opposing portions having a plurality of apertures, a plurality of pins that each have at least one annular groove, a plurality of retaining washers that have a continuous annular portion and a snap-action

engagement portion connected to the annular portion to define a through hole, the method comprising:

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or
pivotably attaching the first end of the front link between the upper opposing portions by inserting of one of the pins through aligned apertures in the first end of the front link and the upper opposing portions, and securing the pin with one of the retaining washers in the annular groove;

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and
pivotably attaching the first end of the rear link between the upper opposing portions by inserting of one of the pins through aligned apertures in the first end of the rear link and the upper opposing portions, and securing the pin with one of the retaining washers in the annular groove;

pivotably attaching the second end of the front link between the lower opposing portions by inserting of one of the pins through aligned apertures in the second end of the front link and the lower opposing portions, and securing the pin with one of the retaining washers in the annular groove; and

pivotably attaching the second end of the rear link between the lower opposing portions by inserting of one of the pins through aligned apertures in the second end of the rear link and the lower opposing portions, and securing the pin with one of the retaining washers in the annular groove.

34. (new) A method of assembling a derailleur comprising the steps of:

providing a hanger bracket having upper opposing portions with a plurality of apertures;

providing a pulley cage bracket which has lower opposing portions having a plurality of apertures;

providing a first link which has first and second ends having apertures respectively corresponding to the apertures of the hanger bracket and the pulley cage bracket;

providing a second link which has first and second ends having apertures respectively corresponding to the apertures of the hanger bracket and the pulley cage bracket;

providing a plurality of pins which have at least one annular groove, a plurality of retaining washers which have an annular portion and snap-action engagement portions connected to the annular portion which define an aperture;

pivotably attaching the first end of the first link between the upper opposing portions by means of one of the pins inserted through aligned apertures in the first end of the first link and the upper opposing portions, the pin secured by means of one of the retaining washers mating with the annular groove;

pivotably attaching the first end of the second link between the upper opposing portions by means of one of the pins inserted through aligned apertures in

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Application No.: 09/991,923

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cont the first end of the second link and the upper opposing portions, the pin secured by means of one of the retaining washers mating with the annular groove;

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cont pivotably attaching the second end of the first link between the lower opposing portions by means of one of the pins inserted through aligned apertures in the second end of the first link and the lower opposing portions, the pin secured by means of one of the retaining washers mating with the annular groove; and

pivotably attaching the second end of the second link between the lower opposing portions by means of one of the pins inserted through aligned apertures in the second end of the second link and the lower opposing portions, the pin secured by means of one of the retaining washers mating with the annular groove.
